BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

IN THE MATTER OF	**)**	
	)	
IP-ENABLED SERVICES	**)**	**WC DOCKET NO. 04-36**

COMMENTS OF AMHERST, MASSACHUSETTS CABLE ADVISORY COMMITTEE

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May 28, 2004

TABLE OF CONTENTS

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The Amherst, Massachusetts Cable Advisory Committee ("Amherst CAC") hereby responds to the Commission's Notice of Proposed Rulemaking ("NPRM") in the above-captioned proceeding.[1]

I. INTRODUCTION AND SUMMARY

The NPRM seeks comment on whether any class of IP-enabled services may be properly classified under Title VI of the Communications Act as "cable service", whether such class of IP-enabled service may be construed to be a "cable service" for franchising purposes, and what regulatory requirements should apply to those services.[2]

We assert that unidirectional delivery of video programming clearly meets the statutory definition of "cable service"[3] even when transported using IP, and that cable operator revenue from IP-delivered video programming should count toward the gross annual revenues that franchise fees may be based on.

Moreover, we argue that cable customers have an interest in receiving IP-delivered video programming coming from sources on the open Internet, as well from sources within the cable-operator network, on comparable terms. Neither prohibitively high surcharges nor arbitrary technical barriers imposed by cable operators should keep cable customers from being able to view good-video-quality programming coming from the open Internet; otherwise cable customers will be limited to content pre-selected by cable operators.

II. THE COMMISSION SHOULD CONTINUE REGULATION OF VIDEO SERVICES AS "CABLE SERVICES" EVEN WHEN TRANSPORTED USING IP

Federal and State law regulates the provision of cable services in cities and towns in the United States. The basis for regulating cable services is the need of cable service providers to pass along and over rights-of-way in cities and towns.[4] Cities and towns in the Commonwealth of Massachusetts receive 50

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1 In re IP-Enabled Services, Notice of Proposed Rulemaking, WC Docket No. 04-36, FCC 04-28 (March 10,2004) ("NPRM")

2 NPRM ¶ 70.

3 47 U.S.C. § 522(6) and 47 U.S.C. § 522(20), *see* footnote 201 of the NPRM.

4 47 USC § 541

cents per subscriber[5] from cable providers for contract maintenance; cities and towns are permitted to negotiate for up to 5% of providers' gross annual revenue from cable services which may be used to support public, educational and governmental access channels.[6]

What is important is that the fundamentals of cable services remain unchanged, whatever the signal transport method may be. It is irrelevant whether the transport method is IP or the current one. The right-of-way needs of the cable service provider remain, as do the license maintenance and PEG access needs of municipalities. The transport method of the video to subscribers is, and therefore should be defined as, irrelevant in the term cable services.

III. THE COMMISSION SHOULD REQUIRE THAT VIDEO CONTENT FROM THE OPEN INTERNET NOT BE DISCRIMINATED AGAINST, AS WHEN COMPARED TO VIDEO CONTENT FROM A CABLE OPERATOR "WALLED GARDEN", IN TERMS OF "QUALITY OF SERVICE"

For video, as for voice, it is critical that, when delivered as a continuous stream of packets using IP, successive packets that have made their way across the network arrive close enough to on time, and in order, to prevent what could otherwise be very noticeable signal drop-outs. This may be provided for by a variety of mechanisms, such as bandwidth reservation and packet prioritization. Such mechanisms provide for what is known as "Quality of Service" ("QoS") within the cable operator network.[7]

CableLabs, the research and development arm of the cable industry, has undertaken a project known as "PacketCable"[8] to provide for QoS within the cable operator network. Early versions of the PacketCable (in particular, PacketCable 1.1) standard support Voice over Internet Protocol ("VoIP") telephony. PacketCable 2.0 and PacketCable Multimedia[9] are intended to support unidirectional video and interactive multimedia (such as videophone, videoconferencing and video gaming) applications delivered using IP ("XoIP").[10]

Cable-based VoIP must integrate into a world in which, to be viable, it has to seamlessly interoperate with the dominant Public Switched Telephone Network ("PSTN"), and has to do so at competitive price levels. Through gateways, cable telephony VoIP customers on cable-operator networks may call, and receive calls from, the much more numerous, at least at the beginning and for some considerable time going forward, circuit-switched telephony customers on the PSTN they are likely to want to talk to.

For video and multimedia services ("XoIP"), on the other hand, where cable operators themselves are likely to start out as dominant providers, there may be a temptation to keep customers within a "walled

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5 Massachusetts General Laws - Chapter 166A, Section 9

6 47 USC § 531, 47 USC § 541, 47 USC § 542

7 "Internetworking Technology Handbook" Chapter 49, "Quality of Service (QoS)", Cisco Systems, <http://www.cisco.com/univercd/cc/td/doc/cisintwk/ito_doc/qos.htm>.

8 <http://www.cablelabs.com/projects>; <http://www.packetcable.com>

9 "PacketCable 1.2 Architecture Framework Technical Report", Technical Report Number PKT-TR-ARCH1.2-V01-001229, <http://www.packetcable.com/downloads/specs/PKT-TR-ARCH1.2-V01-001229.pdf> ; "PacketCable Multimedia Architecture Framework Technical Report", Technical Report Number PKT-TR-MM-ARCH-V01-030627, <http://www.packetcable.com/downloads/specs/PKT-TR-MM-ARCH-V01-030627.pdf>.

10 Christopher J. Lammers, "Enabling Advanced Consumer Services", presentation at National Summit On Broadband Deployment II., April 28, 2003, <http://www.neca.org/media/ChristopherLammers.pdf>.

garden",[11] giving ready exposure solely to offerings of content and marketing partners.[12] Descriptions of PacketCable architecture make note of the knitting together of cable operator zones (geographic regions) and domains (administrative entities, such as distinct cable operators) through a "Managed IP InterProvider Network" (also referred to as a "Managed IP Backbone"), extending PacketCable QoS across the entire cable industry, potentially globally.[13] While PacketCable services are explicitly not delivered over the public Internet,[14] gateways are shown in architectural depictions,[15] indicating interfaces with that public Internet, for XoIP as for VoIP.

A. QUALITY OF SERVICE PRICING

QoS pricing may speculatively be based on volume (such as per transferred gigabit) or time (such as per minute) for each of a variety of available data rates supporting correspondingly varied levels of received video quality.

It is of great importance to consumers that they not be excluded, by means of prohibitive QoS surcharge pricing, from access to competitive video content, viewable with good Quality of Service, that is available on the open Internet. Such content may either not be offered by the cable operator, or may not be offered by the cable operator at as attractive a price. For the sake of competition benefiting the customer, provision of QoS between a gateway to the wider Internet and the customer ought not to impose prohibitive additional charges, relative to QoS charges between a content source on the cable operator network and the customer.

B. END-TO-END QUALITY OF SERVICE TECHNICAL FEASIBILITY

In its "Navigational Device Order"[16], the Commission required that technical information be provided by cable operators concerning the interface that a customer-supplied navigation device would have to accommodate in order to operate with the services delivered by the cable system.[17]

In a similar way, mandated disclosure of PacketCable QoS interfaces would be desirable to provide a necessary foundation for interoperability between QoS technology used within the cable operator network

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[11] "What is walled garden? - A Word Definition From the Webopedia Computer Dictionary", <http://www.webopedia.com/TERM/W/walled_garden.html>; "PBS ventures into cable's interactive 'walled gardens'", Current (The Newspaper About Public Television and Radio), Nov. 13, 2000, <http://current.org/tech/tech021cable.html>.

[12] "Cable's new IP strategies bode well for web content", Residential Broadband Strategies, Vol. 2 No. 6/ June-July 2003, <http://www.lennoxresearch.com/rbs0603.html>. In the "Challenge to cable's gatekeeper role" section, the observation is made that "the ability of content suppliers in the IP domain to create direct relationships with end users for purposes of authorizing access to content and paying for its use can be a downside of the IP broadband option in the eyes of cable operators, since it can deprive them of the gatekeeper role they enjoy in the legacy TV domain."

[13] Note the declarations in the previously cited "PacketCable 1.2 Architecture Framework Technical Report", *see* footnote 9, that "The PacketCable 1.2 specifications extend the baseline single-zone architecture to a national or international footprint by enabling communications between PacketCable zones, either within one cable operator's network or between the networks of different cable operators" (Section 1.1 Purpose), and "The architecture is capable of supporting millions of subscribers over multiple cable operator networks" (Section 1.2 PacketCable Overview).

[14] David McIntosh & Maria Stachelek, VoIP Services: PacketCable Delivers a Comprehensive System, <http://www.packetcable.com/downloads/NCTA02_VOIP_Services.pdf>.

[15] The PacketCable Reference Architecture is visualized in the previously cited "PacketCable 1.2 Architecture Framework Technical Report", *see* footnote 9, in Figures 3 and 4 in Section 6.2 of that Technical Report, with a Managed IP InterProvider Network cloud linking zones both within and across distinct cable operator domains. Gateways to the PSTN are shown in each zone, but not characterized in terms of their capability of supporting QoS at broadband data rates.

[16] In re Implementation of Section 304 of the Telecommunications Act of 1996: Commercial Availability of Navigation Devices, Report and Order, CS Docket No. 97-80, FCC 98-116 (June 24, 1998).

[17] ibid. ¶ 34.

and QoS mechanisms that may become available on the Internet, so that cable customers may enjoy the benefit of end-to-end Quality of Service for video originating from outside the cable operator network.

Technical disclosures may not be sufficient to assure the technical feasibility of end-to-end QoS. The Commission should monitor proposed QoS interfaces, soliciting comments as to whether they may be excessively burdensome.

IV. CONCLUSION

For the reasons stated above, the Amherst Cable Advisory Committee advocates that video services should continue to be defined as, and regulated as, "Cable Services" even when delivered using IP, and that video content from the open Internet - in terms of Quality of Service pricing and technical feasibility - should not be disadvantaged as compared to content originating on the cable operator network.

Respectfully Submitted,

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